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AMENDMENT TO THE CLAIMS

Claims 1-35 (Cancelled)

36. (Original) A digital hearing aid system, comprising:

- at least one microphone for receiving a sound signal;
- an analog to digital (A/D) converter for converting the sound signal into a digital sound signal;
- a digital sound processor for processing the digital sound signal;
- a digital to analog (D/A) converter for converting the processed digital sound signal into an analog sound signal;
- a speaker for transmitting the analog sound signal; and
- a precision low jitter oscillator circuit for generating an adjustable clock signal that is coupled to the A/D converter, the D/A converter, and the digital sound processor, wherein the precision low jitter oscillator circuit includes a plurality of differential inverters configured in a feedback loop, each differential inverter including a capacitive trimming network for adjusting the clock signal and a resistive load for minimizing jitter.

Claims 37-38 (Cancelled)

39. (New) The digital hearing aid system of claim 36, wherein the precision low jitter oscillator circuit further includes a plurality of digital trimming bits coupled to the capacitive trimming networks for selecting one or more capacitors in each capacitive trimming network, wherein the

delay of each differential inverter is simultaneously adjusted in response to the digital trimming bits.

40. (New) The digital hearing aid system of claim 36, wherein the precision low jitter oscillator circuit further includes a comparator coupled to one of the differential inverters that converts an oscillating output signal generated by the feedback loop from a differential signal to a single-ended signal.

41. (New) The digital hearing aid system of claim 40, wherein the precision low jitter oscillator further includes a first divider for dividing the single-ended signal by a factor of 2 to form a first divided signal.

42. (New) The digital hearing aid system of claim 41, wherein the precision low jitter oscillator further includes a second divider for dividing the first divided signal by a factor of 2 to form a second divided signal.

43. (New) The digital hearing aid system of claim 42, wherein the second divider is coupled to a reset signal and includes circuitry to synchronize the second divided signal with an external clock signal.

44. (New) The digital hearing aid system of claim 36, wherein the precision low jitter oscillator further includes a bias circuit coupled to the plurality of differential inverters for biasing the differential inverters at a common operating point.

45. (New) The digital hearing aid system of claim 36, wherein the differential inverters include a pair of inputs and a pair of outputs, an input stage transistor pair coupled between the pair of inputs and the pair of outputs, and a pair of resistive loads coupled to each output in the pair of outputs.

46. (New) The digital hearing aid system of claim 45, wherein the differential inverters further include a pair of base capacitors coupled between the pair of outputs, wherein the base capacitors set a base time delay for signals communicated through the differential inverter.

47. (New) The digital hearing aid system of claim 46, wherein the capacitive trimming network is coupled in parallel to the base capacitors between the pair of outputs.

48. (New) The digital hearing aid system of claim 47, wherein the differential inverters further include a biasing transistor coupled to an external bias signal and the pair of input transistors.

49. (New) The digital hearing aid system of claim 40, wherein the precision low jitter oscillator further includes a bias circuit coupled to the plurality of differential inverters and a comparator for biasing the differential inverters and the comparator at a common operating point.

50. (New) The digital hearing aid system of claim 36, wherein the capacitive trimming networks include a plurality of binary weighted capacitors.

51. (New) The digital hearing aid system of claim 50, wherein the plurality of binary weighted capacitors are configured in a plurality of binary levels, each binary level including a pair of capacitors and at least one pass transistor, wherein the pass transistor is coupled to one of the digital trimming bits.
52. (New) The digital hearing aid system of claim 51, wherein the digital trimming bits turn on and off the pass transistors at each of the binary levels in order to selectively connect the pair of capacitors in each of the binary levels to the differential inverters.
53. (New) The digital hearing aid system of claim 52, wherein the plurality of binary levels includes at least five levels.
54. (New) The digital hearing aid system of claim 52, wherein the capacitive trimming networks are coupled to an output stage of the differential inverters.
55. (New) The digital hearing aid system of claim 45, wherein the pair of resistive loads and the input stage transistor pair are manufactured from a common semiconductor process.
56. (New) The digital hearing aid system of claim 55, wherein the pair of resistive loads are made of non-salicided polysilicon.
57. (New) The digital hearing aid system of claim 45, wherein the input stage transistor pair are NMOS devices.

58. (New) The digital hearing aid system of claim 36, further comprising:

a rear microphone for being directed into the ear canal of a hearing aid user;

an occlusion sub-system that subtracts an unwanted signal from the rear microphone from the processed digital sound signal to compensate for an occlusion effect caused by the amplification of a hearing aid user's voice within the ear canal.

59. (New) The digital hearing aid system of claim 36, wherein the analog-to-digital converter includes a preamplifier that applies a gain to the sound signal prior to conversion into the digital domain.

60. (New) The digital hearing aid system of claim 59, further comprising:

a headroom expander coupled to the analog-to-digital converter that applies a gain to the digital sound signal to generate a headroom expander output signal, wherein the headroom expander is configured to detect the energy level of the digital sound signal and vary the gain applied by the preamplifier as a function of the detected energy level.